

Tonopah Public Utilities Water System

Water Conservation Plan

Background / System Information

The Tonopah Public Water System (PWS NV000237) serves customers within the Tonopah and surrounding areas. The total service area in Town of Tonopah is approximately six square miles. The complete service area including the Tonopah Airport, well field and transmission line is approximately 32 square miles. The estimated population served (in 2009) is 2904. All residential customers are metered. The 223 commercial services are all metered. Residential and commercial customers are billed on a flat fee plus a per 1,000 gallon rate.

The system is located in the Lower Smoky and Ralston Valleys. Water is supplied from eight (8) drilled wells using submersible motors. Above-ground storage within the distribution system consists of six (6) welded steel tanks totaling 3.5 million gallons. Full-time disinfection is in place. The Distribution system has 5 pressure zones each controlled with PRV's throughout town. Wastewater collected from the area is treated at the utilities treatment facility located west of town, in the Easterly section of town there are individual septic systems within the utilities service area. The effluent flows from the treatment facility into eight (8) rapid infiltration basins. The utility has completed a preliminary engineering study on effluent re-use for the wastewater treatment facility. Projected savings once re-use is in place the savings is estimated to be 18.1 gallons of water per person per day. Funds have been identified to begin the design phase of the re-use facility.

The original Conservation Plan for the system was developed in 1992. The plan is to be reviewed at five year intervals, with modifications to meet changing system conditions.

Plan Elements

This plan describes the drinking water conservation and drought management efforts within the Town of Tonopah along with implementation schedules. The plan components conform to Nevada regulations as outlined by the Nevada Department of Conservation and Natural Resource, Division of Water Resources. Plan elements address the following areas:

- Increase public awareness of the need to conserve water.
- Encourage reduction in lawn sizes and use of arid and semiarid plants.
- Identify specific water conservation measures.
- Propose plan to identify and reduce leakage.
- Increase reuse of effluent where applicable.
- Provide a drought contingency plan.
- Implementation schedule.

- Plan effectiveness metrics.
- Variable pricing analysis.

Public Awareness

The Tonopah Public Utilities efforts to enhance public awareness of the need to conserve water include the following:

- New customers are provided with literature on conservation when they open a water service account. Examples include materials from the American Waterworks Association, and USDA Agricultural Extension.
- Periodically, educational literature is placed on water bills, or displayed on the Town's message board. Educational materials include tips on Conservation landscaping, 5 basic ways to conserving water, 25 things you can do to prevent water waste and water leak loss calculators.

Lawn sizes and use of arid and semiarid plants

Town owned areas, Residential areas and Commercial areas customers are encouraged to promote the use of drip irrigation and climate-appropriate plant materials.

Specific water conservation measures

- Nye County has adopted Water and Wastewater Ordinance (copy enclosed). The Ordinance applies to structures which are renovated as well as all new construction.
 - a) Copies of the Ordinance are furnished to local suppliers and contractors.
- All meters 8" and larger are tested annually, and replaced if under- registering by more than 5%.
- All residential meters are tested every ten years, and replaced if under- registering by more than 5%.
- The plumbing code, which specifies low-flow fixtures, is required.
- The Water and Wastewater Code (Chapter 22.28) includes a provision that water service can be shut off for wasting water. This is enforced by visual inspection for runoff, following-up on citizen reports, and review of use at metered services. Typically a verbal or written warning is issued, followed by a shut-off when cooperation is not forthcoming.
- All commercial customers are metered and pay a metered water rate charge based on usage (water rate charges are included).

- A residential metering program has been in place for over thirty (30) years. These meters are read monthly
- Tonopah Public Utilities estimates an additional 5% water savings with the low flow fixtures, meter checkups, meter replacements and informational handouts for new accounts. This savings would equate to a savings of 9.5 gallons per person per day.

Plan to identify and reduce leakage

- The Tonopah Public Utilities has in place a capital improvement plan to replace distribution lines at the anticipated life-cycle end.
- Monthly, we audit production vs. sales to determine the amount of unaccounted water and infrastructure leakage index. We also compare current to historical same-month production. When production increases unexpectedly, we initiate a leak survey.
- It is our written policy to repair leaks in a timely manner. All large leaks are repaired immediately and small leaks (less than 1 gallon per minute) within 48 hours.

Reuse of effluent

Treated effluent from the wastewater treatment facility is directed into rapid infiltration basins. Currently, we are in the design stage to reuse effluent within the service area.

Drought contingency plan

Nevada is an arid state and The Town of Tonopah is continuing to grow and water requirements are increasing. The area is subject to drought cycles; therefore, it is necessary to have a drought contingency plan. The objective of our plan is to manage the available resources to insure continued supply of potable water during periods of drought. We monitor water levels by computer and record the information.

When Tonopah Public Utilities has found that a water scarcity condition exists or is likely to exist and has proclaimed the existence of a drought or emergency condition, it shall also declare an appropriate drought or emergency stage for its service area which may be Stage 1, Stage 2, Stage 3, or Stage 4, described as follows:

Stage 1 Drought or Emergency

1. Water from Tonopah Public Utilities water system allowed to pool, pond, or run-off of applied areas is considered a waste of water and as such is not permitted.

2. Leaks occurring on the customer side of each meter in Tonopah Public Utilities water system are considered a waste of water and as such are not permitted.
3. Water from Tonopah Public Utilities water system which runs down the street due to excessive watering or poorly maintained sprinklers is considered a waste of water and as such, is not permitted. If a sprinkler system is broken and left on for more than two (2) hours, the water will be shut off by the Tonopah Public Utilities until it is fixed.
4. During a Stage 1 Drought or Emergency, lawn watering, including landscaping and the watering of a garden, will NOT be permitted between the hours of 11:00 am and 5:00 pm

Stage 2 Drought or Emergency

1. Water from Tonopah Public Utilities water system allowed to pool, pond, or run-off of applied areas is considered a waste of water and as such is not permitted.
2. Leaks occurring on the customer side of each meter in Tonopah Public Utilities water system are considered a waste of water and as such are not permitted.
3. No hard surfaces including sidewalks, driveways, parking areas or decks may be washed or hosed down with water supplied through Tonopah Public Utilities potable water system unless required by health and safety requirements.
4. No washing of vehicles with hoses is permitted with Tonopah Public Utilities water supplied through Tonopah Public Utilities potable water system, except with hoses equipped with automatic shut off device or at facilities designated on Tonopah Public Utilities billing records as a commercial vehicle wash.
5. Water used for watering vegetation, including lawns, landscaping, and gardens is limited as follows:
 - a. Residences with even numbered addresses: as identified by Nye County Planning, Wednesday & Saturday.
 - b. Residences with odd numbered addresses: as identified by Nye County Planning. Tuesday & Sunday.
 - c. Commercial and Industrial Customers, as identified by Tonopah Public Utilities, Tuesday & Friday.
 - d. All watering of lawns, landscaping, and gardens is prohibited between the hours of 11:00 am and 5:00 pm
6. No use of water for and decorative purpose is permitted.

Stage 3 Drought or Emergency

1. Water from Tonopah Public Utilities water system allowed to pool, pond, or run-off of applied areas is considered a waste of water and as such is not permitted.
2. Leaks occurring on the customer side of each meter in Tonopah Public Utilities system are considered a waste of water and as such are not permitted.
3. No hard surfaces including sidewalks, driveways, parking areas or decks may be washed or hosed down with water supplied through Tonopah Public Utilities potable water system unless required by health and safety requirements.
4. No washing of vehicles with hoses is permitted with Tonopah Public Utilities water supplied through Tonopah Public Utilities potable water system, except with hoses equipped with automatic shut off device or at facilities designated on Tonopah Public Utilities billing records as a commercial vehicle wash.
5. Water used for watering vegetation, including lawns, landscaping, and gardens is limited as follows:
 - a. Residences with even numbered addresses: as identified by Nye County Planning, Wednesday & Saturday.
 - b. Residences with odd numbered addresses: as identified by Nye County Planning, Tuesday & Sunday.
 - c. Commercial and Industrial Customers, as identified by Tonopah Public Utilities, Tuesday & Friday.
 - d. All watering of lawns, landscaping, and gardens is prohibited between the hours of 11:00 am and 5:00 pm
6. No use of water for and decorative purpose is permitted.
7. Water from the towns potable water system used for general construction or maintenance activities, including dust control, compaction and concrete curing, is considered a waste of water and as such is not permitted.

Stage 4 Drought or Emergency

1. Water from Tonopah Public Utilities water system allowed to pool, pond, or run-off of applied areas is considered a waste of water and as such is not permitted.
2. Leaks occurring on the customer side of each meter in Tonopah Public Utilities water system are considered a waste of water and as such are not permitted.
3. No hard surfaces including sidewalks, driveways, parking areas or decks may be washed or hosed down with water supplied through Tonopah Public Utilities potable water system unless required by health and safety requirements.

4. No washing of vehicles with hoses is permitted with Tonopah Public Utilities water supplied through Tonopah Public Utilities potable water system, except with hoses equipped with automatic shut off device or at facilities designated on Tonopah Public Utilities billing records as a commercial vehicle wash.
5. Water used for watering vegetation, including lawns, landscaping, and gardens is limited as follows:
 - a. No watering from December through February;
 - b. Watering will only be allowed one day per week during March, April & May.
 - c. Watering will be allowed two days per week from June 1st through August 15th:
 1. Residences with even numbered addresses: as identified by Nye County Planning, Wednesday & Saturday.
 2. Residences with odd numbered addresses: as identified by Nye County Planning, Tuesday & Sunday.
 3. Commercial and Industrial Customers, as identified by Tonopah Public Utilities, Tuesday & Friday.
 - d. One day per week August 16th through September;
 - e. All watering of lawns, landscaping, and gardens is prohibited between the hours of 11:00 am and 5:00 pm
6. No use of water for and decorative purpose is permitted.
7. Water from the towns potable water system used for general construction or maintenance activities, including dust control, compaction and concrete curing, is considered a waste of water and as such is not permitted.
8. During a Stage 4 Drought or Emergency, the planting or installing of new lawns is prohibited from June through September.

Implementation schedule

All of the plan elements listed are currently in place. The plan is to be reviewed every five years, and updated as system needs change.

100% of residential services are now metered.

Plan effectiveness metrics

Historical well production will be compared to estimated population each year to determine the gallons per capita per day (gpcpd) consumption. For 2009, the gross production less commercial sales, divided by the estimated population, is 35,941 gpcpd. With average annual consumption is significantly greater than 35,941 gpcpd, plan revision will be considered, to include additional conservation measures. At the present time, well production, less commercial sales, provides a gross gpcpd estimate. The same calculation applied to winter sales, provides an estimate of non-irrigation household use.

When a plan element is activated, such as mailing literature or declaring a drought stage, production in terms of gpcpd will be compared to same month historical data to estimate effectiveness.

Variable pricing analysis

The present residential water rate structure is billed on a flat fee plus a per 1000 gal. Rate. Commercial accounts numbering 223 are billed on a flat fee plus a per 1000 gal. Rate. Tonopah Public Utilities may impose an emergency rate increase high enough to reduce usage. There are no plans to change the rate structure only to promote conservation at this time. A rate increase went into effect July 01 2009, this promoted conservation on the part of the residents. The rate structure in place in Tonopah does promote conservation of water as residents are charged more if they use more water. Rates are reviewed annually and adjusted, to meet budgeted costs. Each time rates are altered, the water usage patterns will be analyzed to determine price sensitivity. The amount of water conserved as a result of actual price changes, in terms of gpcpd, will be used in future analyses.